Nebraska Information
Technology Commission

**STANDARDS AND GUIDELINES**

# Geospatial Metadata Standard

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| Category | **Data and Information Architecture** |
| Title | **Geospatial Metadata Standard** |
| Number | **XX-XXX** |

**Applicability**

☑ **State Government Agencies**
- ☑ All..... **Standard**
- ☐ Excluding _____.....**Not Applicable**

☑ **State Funded Entities -** All entities receiving state funding for matters covered by this document..... **Standard**

☑ **Other: Public Entities-** Other public entities developing or acquiring geospatial data not supported by state funding .....**Guideline**

**Definitions:**
**Standard** - Adherence is required. Certain exceptions and conditions may appear in this document, all other deviations from the standard require prior approval of NITC Technical Panel.
**Guideline** - Adherence is voluntary.

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| Status | ☐ Adopted | ☑ Draft | ☐ Other:_____ |
| Dates | Date: July 12, 2005 Draft<br>Date Adopted by NITC:<br>Other: | | |

Prepared by: Nebraska GIS Steering Committee for consideration by Technical Panel of the Nebraska Information Technology Commission
Authority: Neb. Rev. Stat. § 86-572(2c), 86-516(6)
http://www.nitc.state.ne.us/standards/

## 1.0 Standard

All state agencies and entities that receive state funding used, directly or indirectly, for geospatial data development or maintenance should ensure that geospatial data it collects, produces, maintains, or purchases and which is used for policy development, implementation, or compliance review is documented with metadata compliant with the latest version of the Federal Geographic Data Committee (FGDC) Content Standards for Digital Geospatial Metadata.

### 1.1 Steps/Timeline for Implementation

a. State agencies and other applicable state funded entities shall institute procedures for complying with standard for new geospatial data development or acquisition upon adoption of standard by the NITC.

b. State agencies shall complete initial listing of existing, applicable geospatial data holdings within three months of the adoption of standard by NITC.

c. State agencies shall complete meta-lite documentation of existing, applicable geospatial data holdings within six months of the adoption of standard by NITC.

d. State agencies shall complete FGDC-compliant metadata documentation of existing and applicable geospatial data holdings within 12 months of the adoption of standard by NITC.

## 2.0 Purpose and Objectives

The purposes of this standard is to preserve the public's investment in geospatial data, to save public resources by avoiding unnecessary duplication of expensive geospatial data acquisition, to minimize errors through inappropriate application of geospatial data, and to facilitate harmonious trans-agency public policy decision-making and implementation through the use of shared geospatial data.

### 2.1 Background

Broadly defined, geospatial data is any data that includes locational or positional information about features in the dataset. Geospatial data provides the data foundation for applications of Geographic Information System (GIS) technology.

The development and maintenance of geospatial data is usually the most expensive component in the implementation of GIS technology. In most cases, this high initial investment is justifiable because of the powerful capabilities of the technology and the fact that, if appropriately maintained, the data will be useful for a very long period, and in many cases, for a wide range of applications.

Most geospatial datasets include numerous attributes and parameters that relate to data variables, methodologies and assumptions. Knowledge and understanding of the implications of these variables is a key to the appropriate utilization of that data. Without appropriate documentation, this specialized knowledge usually resides only in the memory of the GIS specialist(s) who developed the original data. Because of the power of the GIS technology, geo-spatial analysis is increasingly being used to develop and implement a wide range of public policy. In many cases, these public policy applications endure long past the availability of the GIS-specialist(s) who developed one or more of the original geospatial datasets upon which the public policy and its subsequent implementation are

based. Without appropriate documentation of attributes and parameters of a geospatial dataset assumptions and variables, it may be difficult for an agency to determine the appropriate use of a dataset after the GIS specialist who originally created the data is no longer available. Without this documentation, it may also be difficult to appropriately maintain the dataset and therefore maintain the value of the original public investment in the data. In the case of a legal challenge to a public policy or its implementation, for which geospatial data application is integral, it may be difficult to defend that application if the original data developer is no longer available and the dataset was not appropriately documented.

Due to the relatively high costs of developing and maintaining many geospatial datasets, it is important that public investments in this data are undertaken in a manner to maximize the long-term return on these public investments. Appropriately documenting a dataset is one way to ensure a dataset's long-term usability. It is also a key to enabling the use of that dataset for multiple applications by multiple users. Without documentation, it is difficult for other users within the same agency, in other state agencies, or other public entities at various levels of government to be confident they are appropriately utilizing a geospatial dataset.

One of the great strengths of GIS technology is the ability to integrate and analyze disparate data based on its common or adjacent location. GIS has evolved to be a mainstream technology, used for a very wide range of applications, highly integrated with other information technology, and employed by users with a wide range of technical expertise and knowledge. As GIS has evolved, users now routinely access geospatial data, via the Internet, from multiple sources and integrate that data with other geospatial data and make public policy decisions based on analysis of the interaction of those datasets. Only when a geospatial dataset is adequately documented is it prudent to incorporate that data into a GIS analysis.

To address this wide range of concerns and needs for geospatial data documentation, the Federal Geographic Data Committee (FGDC) has worked with a wide spectrum of geospatial data users to develop a national standard for documenting geospatial data. This standard is known as the Content Standard for Digital Geospatial Metadata (CSDGM). This standard has gone through a couple revisions and will be reviewed and updated as necessary.

### 2.2 Objectives

This standard requiring the documentation of geospatial data with standardized metadata has the following objectives:

2.2.1. Preserve public investment in data collection/development beyond the tenure or availability of the original data developer.

2.2.2. Preserve the background geospatial information used to justify and make public policy decisions and preserve the information needed to guide appropriate implementation of those decisions beyond the tenure of a particular data developer.

2.2.3. Save public resources by facilitating the sharing of expensive geospatial data among public agencies or sub-divisions of agencies and avoid the costly duplication of developing similar geospatial datasets.

2.2.4. Minimize problems and potential liability the might be caused by the inappropriate use of undocumented geospatial data.

2.2.5. Facilitate harmonious, trans-agency public policy decision-making and implementation by enabling multiple agencies and levels of government to access and appropriately use common geospatial datasets and thereby make it more likely that intersecting public policy decisions, across levels of government, will be based on the same information.

## 3.0 Definitions

### 3.1 Geospatial Data

A term used to describe a class of data that has a geographic or spatial nature. The data will usually include locational information (latitude/longitude or other mapping coordinates) for at least some of the features within the database/dataset.

### 3.2 Metadata

Data describing a GIS database or data set including, but not limited to, a description of a data transfer mediums, format, and contents, source lineage data, and any other applicable data processing algorithms or procedures.

### 3.3 Metadata-lite

A subset of the full FGDC-compliant metadata (data title, data subject matter, map projection, geographic extent, data owner and access information, etc.) used primarily for the purposes of cataloging and enabling the use of automated search tools to find and access available geospatial data. Does not fully document the dataset's variables, assumptions or development process that is commonly needed to guide appropriate use. An online metadata-lite development tool is available through the Nebraska Department of Natural Resources website.

### 3.4 Content Standard for Digital Geospatial Metadata

A comprehensive national metadata standard developed and adopted by the Federal Geographic Data Committee (FGDC) under the authority of Executive Order 12906, "Coordinating Geographic Data Acquisition and Access: The National Spatial Data Infrastructure," which was signed on April 11, 1994, by President William Clinton. Section 3, Development of a National Geospatial Data Clearinghouse, paragraph (b) states: "Standardized Documentation of Data, ... each agency shall document all new geospatial data it collects or produces, either directly or indirectly, using the standard under development by the FGDC, and make that standardized documentation electronically accessible to the Clearinghouse network." This standard is the data documentation standard referenced in the executive order. Since its initial development, this metadata content standard has undergone revision as deemed necessary by the FGDC, and will like undergo further revisions in the future.

## 4.0 Applicability

### 4.1 State Government Agencies

All State agencies are required to comply with this standard.

### 4.2 State Funded Entities

Entities that are not State agencies but receive State funding, directly or indirectly, for geospatial data development (i.e. Legislative appropriations, Enhanced Wireless 911 Fund, Infrastructure Fund, etc.) are required to comply with this standard.

### 4.2 Exemption

Exemptions may be granted by the Nebraska Geographic Information System Steering Committee *(or NITC Technical Panel)* upon request by an agency.

#### 4.2.1 Exemption Process

Any agency may request an exemption from this standard by submitting a "Request for Exemption" to the Nebraska Geographic Information System Steering Committee *(or NITC Technical Panel).* Requests should state the reason for the exemption. Reasons for an exemption include, but are not limited to: statutory exclusion; federal government requirements; or financial hardship. Requests may be submitted to the Office of the CIO via e-mail or letter (Office of the CIO, 521 S 14th Street, Suite 301, Lincoln, NE 68508). The GIS Steering Committee *(or Technical Panel)* will consider the request and grant or deny the exemption. A denial of an exemption by the GIS Steering Committee *(or Technical Panel)* may be appealed to the NITC.

## 5.0 Responsibility

### 5.1 NITC

The NITC shall be responsible for adopting minimum technical standards, guidelines, and architectures upon recommendation by the technical panel. (N.R.S. 86-516 §6)

### 5.2 State Agencies

Each state agency will be responsible for ensuring that geospatial data developed, maintained, or purchased and which is used for policy development, implementation, or compliance review with be documented consistent with this standard.

### 5.3. Granting Agencies and Entities

State granting or fund disbursement entities or agencies will be responsible for ensuring geospatial metadata documentation requirements are included in requirements and regulations related to fund disbursements.

## 6.0 Related Documents

### 6.1 Content Standards for Digital Geospatial Metadata

http://fgdc.er.usgs.gov/metadata/meta_stand.html